

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

Illinois Commerce Commission	:	
On Its Own Motion	:	
	:	18-NOI-01
Notice of Inquiry Regarding	:	
Electric Vehicles	:	

NOTICE OF INQUIRY

I. Background

As the cost of batteries decreases and environmental and climate issues become more pressing, electric vehicles (“EVs”) are becoming a viable alternative to internal combustion engine vehicles. According to Bloomberg NEF’s *Electric Vehicle Outlook 2018* report (“The Report”), fifty-five percent of all new car sales and thirty-three percent of global fleets will be electric by 2040. Furthermore, at current global sales rates, consumers buy a million EVs every six months, representing a substantial portion of auto market sales growth. The Report also indicates that by 2030, eighty-four percent of all municipal bus sales will be electric globally. E-bus and electric fleets are driving market growth due to compelling fleet economics. E-buses have lower operating costs, travel faster, displace transport fuel, and reduce harmful emissions, improving air quality in Urban areas. Additionally, municipal bus fleets ownership costs are cheaper than conventional municipal bus fleets. Although EVs have high up-front costs and currently still represent a small portion of total vehicle sales, they have low maintenance costs, they reduce carbon emissions, and may help stabilize the electric grid.

The current electric grid was not built with EVs in mind. Economic and policy driven changes supporting the proliferation of EVs will have profound impacts on the grid itself.

Sensible accommodations for EVs could lead to many benefits to the grid. However, unmanaged adoption may impact electric grid costs and stability in negative ways. Policy concepts must always be in the direction of public interest.

On April 4, 2018, the Illinois Commerce Commission (“Commission”) hosted a policy session on the nexus between EVs and grid stabilization. Panelists included utilities, EV manufacturers, and consumer advocates, among others. On September 18, 2018, the Commission hosted a second policy session relating to transportation electrification. Panelists included fleet companies, public transportation agencies, and EV manufacturers, among others. The policy sessions helped the Commission to explore the benefits and impacts of EVs on the electric grid, understand ways to foster EV growth in Illinois, and determine some possible best practices for rate structuring and promoting energy efficiency in Illinois.

The policy sessions provided valuable information showing that uncoordinated EV charging could lead to negative impacts, such as power losses and voltage variations that overload the electric grid. Panelists agreed that inefficient, uncoordinated charging is the most pressing challenge relating to EV penetration today. If customers charge their EVs during costly, peak demand times, it could negatively impact the power grid. Conversely, coordinated charging could minimize the need for certain instances of frequency regulation, smooth out generation intermittency from DERs, and allow for improved efficiencies on the grid as a whole.

It is critical that industry stakeholders collaboratively develop best practices for the efficient charging of EVs in areas such as rate design, peak load demand, building codes, and monetary and non-monetary incentives. Once best charging practices are determined, and energy storage technology is further developed, EVs may, in addition to

reducing carbon emissions, have the potential to help stabilize the grid and serve as distributed energy resources (“DER”).

Because EV adoption in Illinois is still in the early stages, Illinois EV Regulatory framework is also in its infancy. While many actors are penetrating the EV industry, regulatory uncertainty discourages utilities and customers from participating at a larger scale. It remains unclear how to efficiently integrate EVs into the current electric system, how to treat charging infrastructure from an ownership perspective, how to determine appropriate rate structures, and how to encourage efficient EV charging practices to support grid stability without burdening non-EV owners.

Accordingly, the Commission initiates this Notice of Inquiry (“NOI”) as a vehicle for gathering information and opinions. The NOI is not intended to result in Commission action but rather, serve as an information gathering exercise to help the Commission identify issues, potential challenges, and opportunities in EV deployment.

II. Applicable Law – NOI

The Commission’s rules with respect to NOIs are found in 2 Ill. Adm. Code 1700, Subpart D. Section 1700.330 states that NOIs will contain, in part, a disclaimer that:

The Notice of Inquiry proceeding is not a rulemaking, but that information gathered may or may not form the basis for the initiation of rulemaking or for other purposes at a later date.

2 Ill. Adm. Code § 1700.330.

III. NOI Manager

Section 1700.310 of the Commission's NOI rules requires the designation of an NOI Manager to conduct discussions as are necessary to address the issues raised in the Commission's directive for an NOI. The NOI Managers in this case will be:

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IV. NOI Questions and Issues

Interested persons and entities are requested to respond to the following questions and issues:

Energy Efficiency:

- A. Do EVs contribute to energy efficiency in Illinois by relying on electricity instead of fossil fuels? If so, how?
- B. Describe whether and how EV charging stations will affect overall energy efficiency in Illinois.

- a. Describe whether and how development of additional charging infrastructure will affect overall energy efficiency in Illinois.

Grid Reliability and Resilience:

- A. Describe whether and how EVs will improve grid reliability and resilience.
- B. Identify best charging practices and whether and how they can relieve pressure on the grid during peak-demand times, as well as relieve pressure on individual circuits.
 - a. Describe whether and how transportation electrification in the public and non-residential sectors will affect the load on the electric grid.
- C. Describe whether and how development of additional charging infrastructure will affect grid reliability and resilience.
- D. What other types of technology can be used to support grid reliability and resilience with continued electrification of the transportation sector?
- E. Do vehicle-to-grid capabilities need to be enabled in order for EVs to provide grid support?
- F. What control by the utility is necessary to ensure reliability and efficient operation of the grid?
- G. Identify cybersecurity implications, if any, of widespread EV adoption.
 - a. Discuss the potential for EVs to be a vector for smart grid control network penetration.
 - b. Discuss the potential for EVs to be vector for causing physical disruptions if charging and discharging is coordinated in a malicious manner as part of a botnet under the control of malicious actors.

Barriers:

- A. Describe regulatory barriers to increased electrification of the transportation sector.
 - a. Identify possible solutions to overcome regulatory barriers.
- B. Describe economic barriers to increased electrification of the transportation sector.
 - a. Identify possible solutions to overcome economic barriers.
- C. Describe any other barriers to increased electrification of the transportation sector.
 - a. Identify possible solutions to overcome those barriers.
- D. Should Illinois prioritize overcoming certain barriers over other barriers?

Benefits:

- A. Describe the cost benefits associated with increased EV deployment in Illinois.

- a. What is the effect on the State?
 - b. What is the effect on individual EV owners?
- B. Describe the environmental benefits associated with increased EV deployment in Illinois.
 - a. Compare environmental benefits to the environmental detriment if additional EV and charging infrastructure is not developed and deployed.
 - b. Describe the environmental effect of EVs on the environment over the lifespan of an EV.
- C. Describe any other benefits associated with increased EV deployment.

EV Charging Infrastructure:

- A. Describe whether more charging stations should be developed in Illinois.
 - a. What external sources could be used to identify the optimal ratio of EVs to charging stations?
 - b. Describe the rate at which additional public charging infrastructure needs to be developed to meet the demand of increasing numbers of EVs in Illinois.
 - c. To what extent and at what rate do customer-owned chargers need to be developed?
- B. Identify the costs associated with installing additional charging infrastructure throughout the state. Assume that installation includes distribution build out, customer make-ready work, and charging equipment.
 - a. Describe who would carry the costs of each aspect of building additional charging infrastructure.
 - b. Describe whether ratepayer funds would pay for any aspect of building charging infrastructure.
- C. Describe whether additional charging stations should be installed in densely populated areas, in areas outside densely populated cities, or both.
 - a. Describe how EV charging infrastructures could penetrate low income communities that generally do not have high EV adoption.
- D. Discuss ownership of charging stations.
 - a. Discuss whether utilities should own charging stations. Explain why or why not.
 - b. Discuss whether third party vendors should own the charging stations. Explain why or why not.
- E. Describe whether charging stations should consist of DC Fast Chargers, slow chargers, or a mixture of both. Explain why.
- F. What other utility service options, especially those currently offered in other jurisdictions, could promote EV adoption?
- G. What kinds of building code considerations should be kept in mind?
- H. What kinds of ordinance changes can help encourage EV adoption?
- I. What other municipal codes can encourage EV adoption?

- J. Describe technical standards, guidelines, and best practices to manage EV charging standards.

Ratemaking:

- A. Describe whether utilities should charge time-varying rates, such as time-of-use rates, to incentivize EV penetration in the state. Explain why or why not.
 - a. How would EV drivers benefit from these rates?
- B. Discuss whether charging infrastructures should be included in the rate base if the charging infrastructure is owned by public utilities. Explain why or why not.
 - a. Discuss whether charging infrastructures should be accounted for as capital expenses. Explain why or why not.
 - b. Discuss whether charging infrastructures should be accounted for as operational expenses. Explain why or why not.
- C. What rate designs have other utilities implemented to encourage EV adoption and how successful have they been?

Regulatory Treatment of EVs and Charging Stations:

- A. Discuss whether EVs should be treated as distributed energy resources (DERs) for regulatory purposes. Explain why or why not.
 - a. Discuss whether passenger cars, transportation vehicles, and corporate fleets should be treated equally. Should one type be favored over others? Explain why or why not.
 - b. How can unique demand response programs be structured for each customer classification?
- B. Discuss how common charging stations should be categorized for regulatory and accounting purposes.
- C. Discuss how privately-owned charging stations should be categorized for regulatory purposes.
 - a. Should common charging stations and privately-owned charging stations enjoy the same regulatory and accounting treatment?
- D. Discuss what kinds of incentives could be implemented to encourage further EV penetration into the US markets.

V. Form and Content of Documents Distributed in this NOI

Pursuant to Section 1700.350 of the Commission's NOI rules:

- a. An original and three copies of all comments, reply comments, and other documents should be submitted to the Chief Clerk of the Commission on or before the date stated in the NOI. The distribution of such copies will be as follows:
 1. Chief Clerk — Springfield
 2. Chicago Office
 3. Office of Chairman & Commissioners — Chicago [successor to PAR Division for purposes of this NOI]
- a. Copies of all documents filed in the proceeding will be available for public inspection at the Chief Clerk's office in Springfield and the Commission's Chicago office.
- a. A copy of the list of participants may be acquired from the NOI Manager. The NOI Manager will take steps to ensure that copies of all documents filed in the proceeding are posted to the Commission's website, www.icc.illinois.gov. In addition to providing comments and other documents as set forth above, interested persons and entities are requested to email the same in electronic form (preferably Adobe pdf) to ICC.EVNOI@illinois.gov.

VI. Schedule

The schedule for this NOI shall be as follows, unless altered by an NOI Manager with adequate public notice provided:

- Submission of initial comments (pursuant to 2 Ill. Adm. Code 1700.340 (b)):
October 23, 2018.
- Submission of reply comments (pursuant to 2 Ill. Adm. Code 1700.340 (c)):
November 6, 2018.

The Commission anticipates that additional rounds of comments may be beneficial and therefore authorizes the NOI Managers to schedule further rounds, with adequate public notice provided, if they believe that additional comments would be helpful.

Initiated this 24th day of September, 2018.

(SIGNED) Brien Sheahan

CHAIRMAN